

Financial Performance of Private Pension Funds in Ghana: The Effect of Risk Management

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Abstract

Purpose: In Ghana, recently the financial performance of the private pension schemes has gone up tremendously. The purpose of this study is to investigate how risk management methods influence the financial performance of private pension schemes. **Design/Methodology/Approach:** The study randomly selected, 450 private pension managers that have existed for at least five years. Financial reports from these schemes were used to analyse key financial indicators, which include the return on assets (ROA) profitability ratio, the company's size, net investment income, and contribution to the total fund ratio. The research investigation looks at how approaches to risk management affect these pension funds' financial performance by employing a hierarchical multiple regression model. **Findings:** The results demonstrated a strong correlation between firm size, net investment income, contribution to total funds, and the financial performance of private pension funds. From the hierarchical multiple regression model, specific risk management practices, such as those related to stakeholders involved in policy formulation, the risk management framework, response strategies mitigation and enhancement, and internal controls, were identified as significant contributors to the financial performance of pension funds. **Practical Implications:** The study suggests that the National Pensions Regulatory Authority (NPRO) should adjust investment guidelines based on these insights, empowering pension fund managers to implement effective risk management practices. **Originality/Value:** Research on risk management has predominantly been in the banking sector leaving the pension schemes. This study bridges the gap by studying the contributions of pension fund risk management strategies to the astounding rise of the financial performance of private pension schemes.

Keywords

Risk Management, Financial Performance, Financial Indicators, Pension Scheme, Investment, Ghana

1. Introduction

Ghana's pension sector has experienced significant transformation, chiefly due to the legislation of the National Pensions Act, Act 766. This legislative measure was taken in recognition of worker concerns in Ghana concerning variations in retirement benefits between public service and civil organisations. As a direct result of these modifications, Ghana launched a Three-Tier Pension Scheme designed to promote engagement from the private and informal sectors and is administered by the National Pensions Regulatory Authority (NPRA). Tier-One encompasses the Social Security and National Insurance Trust (SSNIT)-managed Basic National Social Security Scheme (BNSSS), which is necessary. On the other hand, trustees who additionally have been approved and licensed privately manage Tier-Two (the Mandatory Occupational Pension Scheme) and Tier-Three (the Personal Pension Scheme and Voluntary Provident Fund).

The 2nd and 3rd Tier pension schemes have witnessed considerable growth, as demonstrated by the Assets Under Management (AUM) of NPRA (2021), which increased from GHS 11,023,178,469 in 2017 to GHS 28,018,717,081 in 2021 more than tripling over five years. This constitutes 76 percent of the assets of the GHS 39,562,987,081 pension fund or 8.6% of Ghana's GDP (Figure 1).

Despite the enormous increase, there is a conspicuous lack of research, articles, or studies detailing how pension fund administrators' risk management practices have contributed to this astounding rise. Consequently, the focus of this study is to investigate the association between the financial performance of Ghana's 2nd and 3rd Tier pension schemes and the risk management strategies utilised by pension fund managers.

The current economic instability, exacerbated by the COVID-19 pandemic and recent global events, has significantly increased the risks affecting pension fund returns, posing a threat to the sector's sustainability (Feher & de Bidegain, 2020). In this challenging environment, pension fund managers grapple with various risks, spanning credit, liquidity, and interest rates. These risks, arising from deficient business practices, corporate governance issues, and inadequate human capacity, directly affect pension funds' financial performance. To address these challenges, many fund managers have implemented risk management processes (Curwood, 2016). In contemporary business practices, effective risk management is essential for gaining a competitive edge and is integral to the survival of financial institutions, especially in the context of historical collapses like Enron, Lehman Brothers, and Merrill Lynch.

The importance of maintaining the creditworthiness of pension funds is paramount for fulfilling their role in providing retirement income for workers

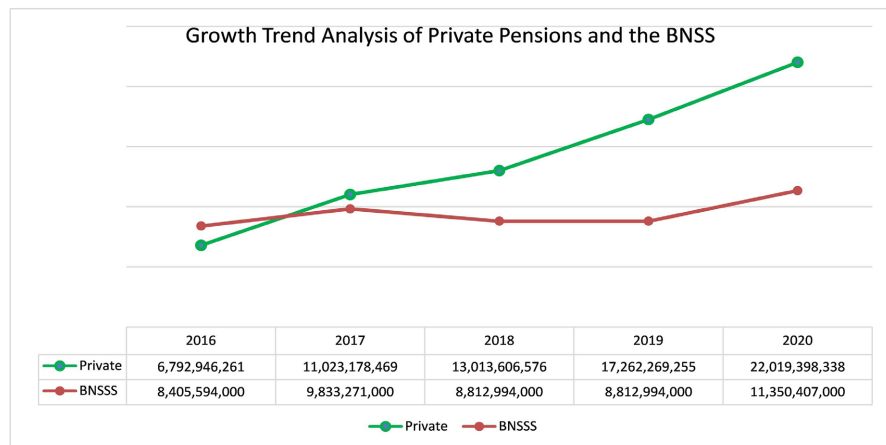


Figure 1. Growth trend analysis of private pensions and the BNSSS.

(Akomea-Frimpong et al., 2022). Effective risk management has become essential for the future growth and sustainable survival of financial institutions, according to research. The commercial, operational, legal, and regulatory risks that Ghana's 2nd and 3rd Tier pension schemes encounter are capable of having a bearing on how they operate every day (Kpessa, 2011). To guarantee profitability and sustainability in delivering retirement income, pension fund managers must skillfully navigate the inherent risks associated with their investments.

While there is a wealth of research on diverse aspects of pension schemes in Ghana, there is a limited body of literature addressing the specific contribution of risk management practices to the financial performance of the country's private pension schemes. Consequently, this study intends to address this gap by examining the relationship between the financial performance of private pension schemes in Ghana and the risk management strategies used by pension fund administrators.

2. Literature Review

This section initiates a discourse on existing literature related to the study's subject. The chapter commences with a theoretical examination of the concept of risk management elucidated by different authors. Subsequently, there is an empirical exploration of diverse perspectives on risk management and its correlation with financial performance, as expounded by contemporary scholars.

2.1. Theoretical Review

To investigate how risk management influences the financial performance of private pension funds in Ghana, theories including the Agency Theory and the Modern Portfolio Theory (MPT) were to be researched (AT). These widely recognised financial and investing theories provide beneficial frameworks for comprehending the way risk management approaches affect financial outcomes.

2.1.1. Modern Portfolio Theory (MPT)

Modern Portfolio Theory, with its principles of diversification, risk-return rela-

tionship, and portfolio optimization, provides a robust theoretical foundation for studying the impact of risk management on the financial performance of private pension funds in Ghana (Markowitz, 1952). The application of MPT offers valuable insights for practitioners and policymakers in the management of private pension funds in Ghana, aligning their strategies with objectives and constraints.

Harry Markowitz's MPT places an intense focus on the significance of diversification in a portfolio to achieve the greatest achievable returns for a given level of risk. You may look into how diversification and asset allocation procedures, considered effective means of managing risk, affect the overall financial performance of private pension plans in Ghana.

Harry Markowitz in the 1950s focused on constructing an optimal portfolio by taking advantage of the complex relationship between risk and return initially created an essential component of finance, Modern Portfolio Theory (MPT). Following MPT, investors can minimize risk for a desired level of return or maximize returns for a given level of risk by diversifying their investments over a variety of different asset classes. Harry Markowitz's MPT places an intense focus on the significance of diversification in a portfolio to achieve the greatest achievable returns for a given level of risk. You may look into how diversification and asset allocation procedures, considered effective means of managing risk, affect the overall financial performance of private pension plans in Ghana.

The relevance of Modern Portfolio Theory to the Study is risk management in portfolio construction. MPT guides risk management in portfolio construction, assisting private pension funds in Ghana in mitigating specific risks and enhancing overall portfolio stability. MPT also aids in strategic asset allocation, determining the optimal mix of asset classes based on risk preferences and financial goals. This is crucial for private pension funds in Ghana seeking to effectively allocate resources among different types of investments. MPT's emphasis on portfolio optimization is crucial for private pension funds aiming to achieve the best possible risk-adjusted returns. It involves identifying the combination of assets that provides the highest expected return for a given level of risk.

2.1.2. Agency Theory

Another relevant theory to consider is the Agency Theory propounded by Jensen & Meckling (2019), which examines the relationship between principals (pension fund owners) and agents (fund managers). It explores how risk management practices may align or misalign the interests of these two parties and how this alignment or misalignment affects financial performance.

Agency Theory is a framework in economics and finance that explores the relationship between principals (those who own the assets) and agents (those who manage the assets on behalf of the principals). In the context of private pension funds in Ghana, Agency Theory becomes a relevant lens through which to examine the dynamics between pension fund owners and fund managers.

2.1.3. Relevance of Agency Theory to the Study

As it addresses the challenges and opportunities in the principal-agent relationship between pension fund owners (principals) and fund managers (agents), agency theory applies to private pension funds in Ghana (Jensen & Meckling, 1976). Agency theory, according to Jensen and Meckling (1976), presents a framework for appreciating the challenges that develop within the principal-agent relationship when the interests of the fund owners and managers may not consistently converge. The alignment of fund owners' and managers' interests is largely dependent on risk management strategies. By making decisions that take into account both risk and return objectives, fund managers who practice effective risk management ensure that they work in the best interest of the pension fund owners (Fama & Jensen, 1983). Risk management techniques, according to Fama and Jensen (1983), can help to align the interests of principals and agents, ensuring that fund managers make choices that are optimal for the pension funds.

How risk management is implemented within, the context of Agency Theory has immediate effects on financial performance. Risk management techniques can help maximize the overall financial performance of private pension plans in Ghana through decreasing risks and synchronizing incentives (Eisenhardt, 1989). According to Eisenhardt (1989), streamlined processes for making decisions and an overall reduction in conflicts of interest between principals and agents are two ways in which effective risk management strategies might enhance the company's financial performance.

Agency Theory provides a theoretical foundation for understanding the dynamics within private pension funds, focusing on the principal-agent relationship. In the Ghanaian context, where risk management is crucial for aligning interests and optimizing financial performance, the application of Agency Theory can shed light on how effective risk management practices contribute to the success of private pension funds.

2.2. Definition of Concepts

2.2.1. What Is Risk?

Historically, risk has been defined as the likelihood that an event may transpire and have either favourable or unfavourable effects on a subject. Risk is defined by Horcher (2011) as an outcome of exposure, although Doherty and Dionne (1993) define it as the unpredictable nature of results. Inherent uncertainties are inherent in every business undertaking, and as financial institutions strive to maximize shareholder value, they unavoidably encounter various risks (Ozili, 2021). These risks, primarily originating from their involvement in financial markets, expose them to potential losses or gains (Horcher, 2011). Risk encompasses two critical elements the probability of an outcome happening and the magnitude of the impact of that outcome. Some risks may have a low likelihood of occurrence but can lead to significant consequences, and vice versa. A thorough comprehension of risks is a crucial step in mitigating adverse effects and

optimizing potential benefits.

2.2.2. Risk Management

The process of optimizing a business's assets to increase its value in an unpredictable environment is referred to as risk management (Ahmadpour et al., 2023). According to Horcher (2011), risk management is the systematic control of uncertainties within the business environment, involving the formulation of strategies to identify and manage risks following regulatory policies and corporate procedures. Ahmadpour et al. (2023) identify three fundamental stages in risk management namely, recognizing and categorising risks, assessing risks based on likelihood and impact, and promptly formulating actions for risk mitigation or enhancement, offering organizations a competitive advantage through timely risk identification and addressing.

In recent decades, various innovations have emerged to assist businesses in aligning risk management with their objectives. Some innovations aim to protect against risks, while others facilitate the exploitation of risks for gain. There is significant variability in how organizations allocate resources to handle risks, ranging from designating a singular risk officer to dedicating an entire unit to this task (Woods & Dowd, 2008). Regardless of the approach adopted, Woods and Dowd (2008) emphasise that all officers should share some responsibility for managing the risks they face, with the ultimate responsibility for shaping the organisation's risk management framework and strategy lying with the board of directors.

2.2.3. Risk Management Framework

Pension fund managers encounter various risks that can be effectively managed through the application of a standardised framework. The Chartered Institute of Management Accountants (CIMA) has proposed a risk management framework that is especially well-suited for managing risks in the financial sector (CIMA, 2002). Woods and Dowd cite Figure 2, which is taken from the CIMA (2002) risk management framework. Woods & Dowd (2008: p. 7), illustrates the sequential phases of risk management. This framework delineates that the risk management process commences with the identification of risks, followed by their assessment.

Woods and Dowd (2008) propose integrating organisational-level risk management into clearly outlined policies set by senior management. These policies should express the organisation's risk tolerance in its pursuit of objectives. Furthermore, Ahmed and Khan (2007) stress the significance of an all-encompassing risk management process involving every department and section of the institution, cultivating a pervasive culture of risk management across the organization. This involves responsive actions, continuous monitoring, and periodic review within a controlled loop overseen by a dedicated team.

2.2.4. Risk Response

In the context of organisational risk management, it becomes necessary to develop methods for mitigating risks if a thorough comprehension of the hazards

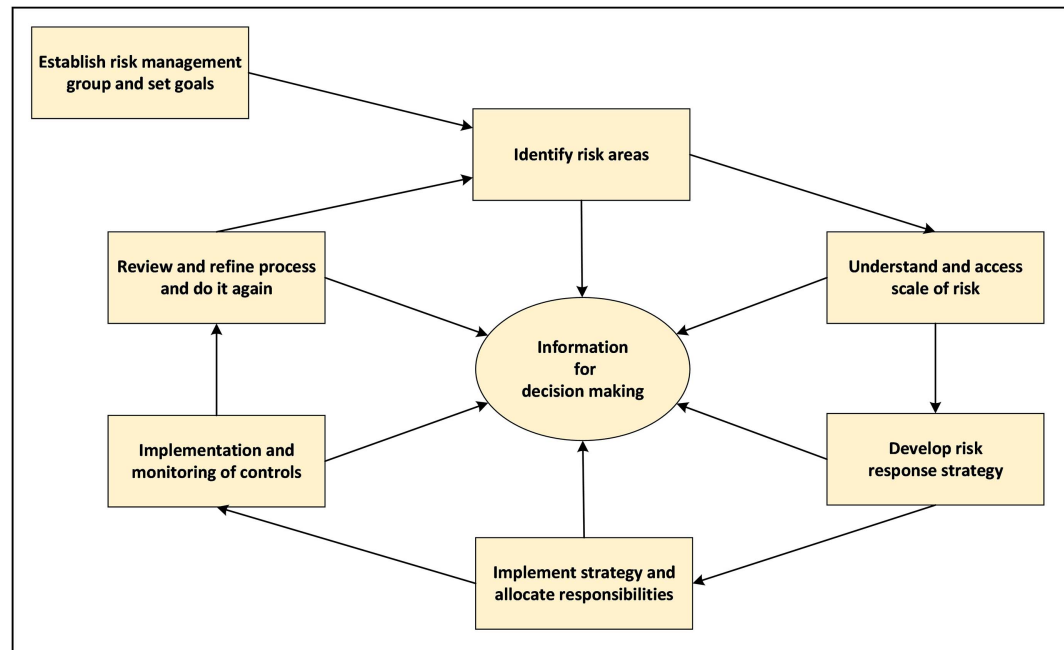


Figure 2. Risk Management Cycle. Source: CIMA (2002) as cited by Woods & Dowd (2008: p. 7).

present in the operating environment is obtained. Clear rules that outline risk management procedures, assign accountable officers, and set up performance metrics for tracking risk response in line with the company's strategic goals form the cornerstone of risk response (Woods & Dowd, 2008). Various approaches exist for organizations to respond to risks, as outlined by Horcher (2011), Woods & Dowd (2008), who identify three overarching strategies:

- 1) Acceptance of risks and internal management through strategies such as natural hedging and internal netting;
- 2) Hedging a portion of risks through risk-sharing strategies, involving tools like derivatives and joint ventures; and
- 3) Comprehensive risk hedging through risk transfer strategies, utilizing instruments such as derivatives, insurance, and securitization.

A firm that entirely avoids risks may yield minimal returns on investments to shareholders. Conversely, a company that fully exposes itself to all risks may face adverse consequences. Hence, businesses must make judicious choices when dealing with risks. To thrive in today's competitive landscape, enterprises must strive to limit risks that put them at a competitive disadvantage while capitalizing on those risks that offer advantages over competitors. Comprehension of risk response necessitates an awareness of the risk-return trade-off, which maintains that greater earnings on investments are usually correlated with higher risks. Managing the risks associated with maximizing shareholder value is a fundamental responsibility of pension fund managers. This can be achieved by mitigating or transferring systematic risks and diversifying unsystematic risks. Woods and Dowd (2008) underscore that the selection of the most appropriate risk management tool depends on the organisation's risk appetite, expertise lev-

el, and the cost-effectiveness of the specific tool.

2.2.5. Internal Controls

Internal control represents the system or framework through which entities or organizations are directed and overseen to accomplish their objectives (Kakero, 2021). Despite being a contemporary concept, it is grounded in age-old human principles of power and control (Zinkin, 2019). Kakero (2021) posits three bases for internal control namely law, codes of practice, and books.

Ghana has established legal frameworks to manage several industries, such as the Public Financial Management Regulations, 2019 (L. I. 2378) handling public entities and the Public Financial Management Act, 2016 (Act 921). The National Pensions Regulatory Authority (NPRA) was further established by the National Pensions Act, 2008 (Act 766) with the mission of managing and promoting the growth of the pensions sector.. Business operations in the country fall under the purview of the Companies Act of 1963 (Act 179). Internal controls, mandated by the law, operate on a 'comply or else' basis (Kakero, 2021).

Concerning codes of practice, while Ghana lacks specific codes for internal control or corporate governance, there are sector-specific codes for firms operating in certain sectors. Examples include the Listed Companies Code, 2020, the Securities and Exchange Commission (SEC), and the Corporate Governance Directive, 2018 (Bank of Ghana). These codes are primarily voluntary, lacking the force of law, and operate on a "comply or explain" approach.

2.3. Empirical Review

2.3.1. Risks in Pension Schemes

Risk constitutes an integral and inevitable element of any pension plan (Barr, 2002). Barr (2002) asserts that risks are inherent in both private and public pension systems, presenting potentially unfavorable outcomes for the pension funds, particularly during periods of bearish financial markets, as emphasised by Bikker and Dreu (2009).

In the context of pension funds, Daykin (2005) defines risk as the likelihood of adverse events occurring, thereby jeopardising the sustainability and realization of objectives within pension funds. Defined contribution pension plans, akin to the Tier-2 and Tier-3 schemes are operational in Ghana (Kpessa-Whyte, 2021), and confront a spectrum of risks encompassing economic, bankruptcy, expense, default, longevity, market, political, fiscal, and interest rate risks.

Longevity risk, focusing on the increase in average life expectancy, directly affects annuity pricing and the amount of annuity that can be purchased. Members, expected to draw down on their accounts instead of acquiring annuities, bear the risk of outliving their funds or leaving a substantial balance upon death. Osei (2005), who contends that a decline in mortality rates among retirees would significantly escalate the costs associated with pension benefits, reinforces this perspective.

Operational risk emerges when scheme managers falter in implementing ef-

fective operational controls, leading to potential information loss concerning an individual's accumulated contributions. This risk can materialise due to unforeseen circumstances such as information technology failure or natural hazards, impairing the pension manager's performance. Insufficient savings for individual members may occur due to excessive administrative overhead or profit-generating deductions (Osei, 2005).

Political risk, as Daykin (2002) defines it, arises when the government intervenes in pension system administration, altering contribution requirements, or directing investments for social or political reasons, regardless of economic returns.

Market risk emerges when the value of investments in individual accounts fluctuates, resulting in significant losses during adverse market conditions.

Economic risk occurs when real rates of return on investments fall below expectations due to factors like economic mismanagement, excessive inflation, challenging economic conditions, and recessions.

Ghana's Tier-Two occupational pension scheme exemplifies defined contribution plans, offering a flexible mechanism for retirement savings, allowing members to participate in investment profits (Ofosu-Hene & Amoh, 2016). Contributors to these programmes bear increased risk in spite of their rewards. In 2015, Gordon, Loeb, and Tseng (2009) carried out a study with 112 US organisations, using linear regression to assess how risk management affected performance. The study employed an index created by the author to measure enterprise risk management and excess stock market return to gauge performance. The findings revealed a substantial positive correlation between enterprise risk management and firm performance. Deng et al. (2020) investigated how credit risk management relates to the performance of financial institutions in South Sudan. Various indicators of institutional performance, such as adherence to the Basel accord, oversight of corporate credit risk, the risk management environment, and credit risk operational practices, were assessed. Using an ARDL model, the authors examined these relationships. Their findings revealed that only compliance with the Basel accord significantly impacts financial institutions' performance, while oversight of corporate credit risk and the risk management environment do not seem to have a significant effect. Conversely, credit risk operational practices appear to have a negative and insignificant impact on financial institutions' performance in South Sudan.

2.3.2. Internal Control in Pension Schemes

This study centers on a particular interpretation of internal control or corporate governance, as defined by O'Donovan (2003). Corporate governance, according to O'Donovan (2003) is an organisational framework encompassing policies, procedures, and personnel, to address the needs of shareholders and stakeholders. It involves the organization, planning, and supervision of management tasks, emphasizing qualities such as sound judgment, objectivity, responsibility, and

integrity. A robust board culture is highlighted, ensuring compliance with policies, procedures, and commitment to external market regulations (O'Donovan, 2003). Additionally, Broni and Velentzas (2012) describe internal control or corporate governance as the management of a company concerning institutional systems and protocols. These systems and protocols are designed to ensure accountability and ethical conduct, encompassing areas such as information disclosure to shareholders and board members, senior executive remuneration, potential conflicts of interest among managers and directors, supervisory structures, and more (Broni & Velentzas, 2012). Drawing from these well-established definitions, this study characterizes corporate governance as the institutional mechanisms governing corporate entities, aiming to enhance accountability while adhering to stringent ethical considerations to preserve the fundamental interests of parties involved in the ownership, establishment, and management of corporations. In the context of this study, internal control and corporate governance represent mechanisms influencing interactions between different functional classes within pension fund managers' organisations and their external stakeholders. Specifically, internal control is viewed as a risk management technique effective for overseeing the investments of Tier-Two and Tier-Three pension funds in Ghana.

2.3.3. Research Gaps

While significant research has explored risks, risk management, and their impact on firm performance across various industries, the prevailing literature has primarily concentrated on the banking and insurance sectors. Moreover, studies related to pensions have predominantly centred on the domain of corporate governance. Using Return on Assets (ROA) as an indicator of performance, this study attempts to fill the gaps in the literature by investigating how risk management strategies impact the performance of private pension funds. Additionally, there is limited literature examining the factors contributing to the financial performance of private pension schemes within the African context.

3. Materials and Methods

This section describes the study's research methodology, sample size, sources of data utilised in the study, and the data analysis technique. Finally, the study's ethical considerations are stated.

3.1. Sample Size

A sample refers to the selected number of respondents from the overall population targeted for data collection and analysis in a study (Kothari, 2004). In general, a larger sample tends to be more representative of the population. However, excessively larger sample sizes than optimal can be costly and provide only marginal improvements in accuracy (Taherdoost, 2017).

The formula for determining the sample size is presented below:

$$k = \left[\frac{P(1-P)Z^2}{e^2} \right] = \left[\frac{0.5(1-0.5)1.96^2}{0.05^2} \right] = 384$$

where:

k = Sample size;

P = Population proportion or standard deviation (assumed as 50% or 0.5);

Z = Z score ($Z = 1.960$ for 95% confidence level);

e = Margin of error (assumed as 5% or 0.05).

The randomly selected 450 people from private pension schemes that have been in operation for at least five years.

3.2. Source of Data

This research utilised a dual approach involving both primary and secondary data sources. The study randomly selected, 450 private pension managers that have been in existence for at least five years. Primary data about the risk management practices adopted by private pension fund managers was collected through the distribution of questionnaires.

The secondary data comprised financial statements submitted to the National Pensions Regulatory Authority (NPRA) by private pension schemes, spanning five years and undergoing analysis. Additionally, supplementary secondary data was incorporated from diverse sources, including the Bank of Ghana, publications in peer-reviewed journals, and reports obtained from journal databases such as Scopus and Web of Science and pension fund managers.

Sources of Questionnaire

The researchers conducted a pilot study and tested to assess the feasibility and the validity of the questionnaire. The feedback from participants in these pilot studies help to identify the issues with the wording, structure, or content of the questions.

3.3. Data Analysis

To identify the contributions of risk management practices by pension fund managers Hierarchal multiple regression was used. Firstly, multiple regression of the drivers of financial performance of the private pension scheme was done. Then regression of the four risk management practices (Parties involved in risk management policy formulation, Risk management framework, Risk mitigation/enhancement, and Internal controls) were introduced in the model. The equations of the models are displayed below;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \quad (1)$$

$$Y = \omega + \partial_1 X_1 + \partial_2 X_2 + \partial_3 X_3 + \partial_4 M_1 + \partial_5 M_2 + \partial_6 M_3 + \partial_7 M_4 + u \quad (2)$$

where:

Y = Financial performance of private pension schemes, α, β 's are coefficients of the first model,

∂ s are coefficients of the second model, ε and u are errors of the first and

second model respectively.

X_1 = Firm size.

X_2 = log Net Investment Income.

X_3 = Contribution to total fund ratio.

M_1 = Parties involved in risk management policy formulation (PPF).

M_2 = Risk management framework (RMF).

M_3 = Risk mitigation/enhancement (RRME).

M_4 = Internal controls (IC).

u = Error or disturbance factor.

3.4. Ethical Consideration

Ethical approval for the study was granted by the Ghana Communication Technology University. The researchers completed an ethics clearance form, providing comprehensive details on the research approach and methodology. Data collection commenced only after obtaining ethics clearance from the university. In adherence to ethical considerations, participants were informed that their participation in the study was voluntary, and they had the option to discontinue answering questions at any point without facing consequences. Confidentiality of responses was assured to the respondents, and the researcher emphasized ethical considerations during the questionnaire introduction.

4. Data Analyses

This section reveals the outcomes derived from the acquired data. The correlation and regression analyses were employed to assess how risk management practices influence the financial performance of private pension schemes in Ghana.

4.1. Descriptive Statistics of Variables

Table 1 presents the average, standard deviation, minimum, and maximum values of the study variables. These variables encompass financial performance (Log ROA), firm size (log total assets), member contribution (Contribution to total fund ratio), Internal Controls (IC) represented logarithmically (log IC), Risk Response (Mitigation/Enhancement) expressed logarithmically (log RRME), Parties involved in Policy Formulation for Risk Management in logarithmic form (log PIPFRM), and log Risk Management Framework (log RMF).

The logarithm of ROA had a mean of 2.7508 and a standard deviation of 0.2634, with a minimum of 1.1335 and a maximum of 3.8817. This indicates that some pension funds operated with moderate performance, given the optimal log ROA should be 4.6 (log 100) for pension funds. Firm size showed a mean of 18.5016 and a standard deviation of 2.4218, with a minimum ratio of 5.41 and a maximum of 12.32. The recorded maximum firm size was 27.2854, while the minimum was 11.3567, suggesting that private pension funds in Ghana have substantial firm size and valuable total assets.

Table 1. Descriptive analyses.

	N	Mean	Std. Deviation	Minimum	Maximum
Log_ROA	447	2.7508	0.2634	1.1335	3.8817
Log_PIPFRM	447	1.1066	0.1009	0.7885	1.2040
Log_RMF	447	1.4608	0.1075	1.1909	1.5892
Log_RRME	447	1.2843	0.1260	1.0188	1.4110
Log_IC	447	1.2835	0.1439	0.9400	1.4375
Firm size	447	18.5016	2.4218	11.3567	27.2854
Contribution to total fund ratio	447	20.5832	4.2931	6.1898	32.9928
Net Investment Income	447	18.3481	2.5969	8.0163	24.1769

The Contribution to total fund ratio had a mean of 20.5832 and a standard deviation of 4.2931, with a minimum ratio of 6.1898 and a maximum of 32.9928. This indicates varying levels of contribution to the total fund ratio among pension funds.

For log Parties involved in Policy Formulation for Risk Management, the mean and standard deviation were 1.1066 and 0.1009, respectively. This suggests that risk management policy formulation is largely driven by the board of directors and senior management. The recorded minimum and maximum were 0.7885 and 1.2040, indicating minimal participation of low-level management and rare engagement of external consultants in risk management policy formulation.

Regarding the risk management framework, the mean recorded was 1.4608, with a low standard deviation of 0.1075. This suggests that most pension fund managers, to a very large extent (4.72 out of 5), comply with pension regulations. They also have internal guidelines, well-defined procedures, a standard reporting structure, and a formal system for risk management, handled by a dedicated unit within the organization.

Risk managers do not often choose to employ joint ventures or insurance as a means of mitigating risks, as seen by the mean score of 1.2843 for Risk Response and the standard deviation of 0.1260. Pension fund managers also actively attend industry conferences and regulatory meetings to be informed about pension developments and have an impact on policy decisions.

4.2. Relationship between Risk Management Practices of Pension Fund Managers and Financial Performance of Private Pension Funds

Table 2 presents the outcomes of the correlation analysis. The results reveal a noteworthy positive correlation between the performance of private pension schemes (measured by log ROA) and key factors such as firm size, contribution to the total fund ratio, net investment income, contribution to the Risk Management

Table 2. Correlation analyses.

		1	2	3	4	5	6	7	8
1	Log_ROA	1							
2	Log_PIPFRM	0.057	1						
3	Log_RMF	0.182**	0.862**	1					
4	Log_RRME	0.269**	0.753**	0.873**	1				
5	Log_IC	0.134**	0.801**	0.918**	0.843**	1			
6	Firm size	0.742**	0.0064	0.142**	0.192**	0.119*	1		
7	Contribution	0.738**	0.110*	0.173**	0.250**	0.141**	0.771**	1	
8	Net Investment Income	0.470**	-0.058	-0.005	0.0051	0.009	0.458**	0.218**	1

**The correlation is significant at the 2-tailed 0.01 level. *The correlation is significant at the two-tailed 0.05 level. IC: Internal Controls; RRME: Risk Response (Mitigation/Enhancement); PIPFRM: Parties involved in Policy Formulation for Risk Management; RMF: Risk Management Framework.

Framework (RMF), Risk Response (RRME), and Internal Controls (IC). Conversely, an insignificant correlation is observed between the ROA of private pension schemes and Parties involved in Risk Management Policy Formulation (PPF). Following this, the financial performance of private pension plans in Ghana correlates well with rising net investment income, firm size, and member contribution. Further evidence from the data points to the great financial performance of private pension schemes as a benefit of good risk management techniques.

4.3. Regression Analyses

A hierarchical multiple regression was developed to assess the relative significance of the independent variables in explaining the variability observed in the dependent variable, the ROA of private pension schemes. **Table 3** displays the regression analysis's findings. The first model (Model 1) shows how business size, member contributions, and net investment income the factors that influence pension funds' financial performance relate to the financial performance. The second model (Model 2) illustrates how fund managers' risk management strategies affect the private pension schemes' financial performance. The R-square of model 1 was 0.665, this shows that about 66.5% of the variation in pension fund performance can be explained by changes in the drivers of financial performance of pension funds (firm size, members contribution, and net investment income). The F-statistics that shows how the model fit the data was significant ($F(3,443) = 292.519; p < 0.001$). The coefficients of the firm size ($\beta = 0.027; p = 0.005$), member's contribution ($\beta = 0.030; p = 0.003$) and net investment income ($\beta = 0.025; p = 0.003$) were all positive and significance. In line with the findings of [Gordon, Loeb, and Tseng \(2009\)](#), there is a noteworthy positive correlation between company performance and size. The second model

Table 3. Hierarchal regression analyses.

	Model 1		Model 2	
	Coefficient	Std. Error	Coefficient	Std. Error
Constant	1.165***	0.063	0.833***	0.128
Firm size	0.027***	0.005	0.027***	0.005
Contribution	0.030***	0.003	0.028***	0.003
Net investment Income	0.025***	0.003	0.024***	0.003
Log PIPFRM			-0.537***	0.138
Log RMF			0.674***	0.213
Log RRME			0.380***	0.120
Log Internal Controls			-0.370***	0.126
R-square	0.665		0.691	
R-square Change	0.665		0.026	
F-statistics	292.519***		139.948***	
F-statistics Change	292.519***		9.226***	

Predictors: Firm size, members contribution net income investment; IC: Internal Controls; RRME: Risk Response (Mitigation/Enhancement), PIPFRM: Parties involved in Policy Formulation for Risk Management; RMF: Risk Management Framework.

($F(7, 439) = 139.948, p < 0.001, R^2 = 0.691$), where the risk management practices of fund managers were included in the model showed significant improvement from the first model with change in R-square of 0.026 and significant change in F-statistics. $\Delta F(4, 439) = 9.22, p < .001, \Delta R^2 = .026$. When every factor was taken into account, the factors explained a significant 2.6% of the variability when risk management strategies of fund managers were added to the model; the final model constituted an enormous effect size. The coefficients were also significant, this implies that indicates that the Parties involved in Policy Formulation for Risk Management, Risk Response, Risk Management Framework, and Internal Controls are useful for predicting private pension scheme performance. The results are in line with the study by [Kimingichi \(2015\)](#) who obtained a significant and strong relationship between the risk management practices of Kenyan pension fund managers and pension fund performance with risk management practices accounting for 81.5% of the variance observed in the financial performance of pension funds. However, the results were contrary to [Ofosu-Hene and Amoh \(2016\)](#) who found no significant relationship between risk management and the banking sector.

5. Conclusion and Recommendations

Research reinforces the theory that strategies for managing risks improve the financial performance of retirement savings plans and financial organizations. The study's findings underscore the significant contribution of pension fund management practices, including Parties involved in Policy Formulation for Risk Manage-

ment, Risk Management Framework, Response (Mitigation/Enhancement), and Internal Controls, to the financial performance of private pension schemes. The overall maturity of fund managers is evident, characterised by well-established structures, policies, procedures, tools, skill sets, and workforce, facilitating informed and profitable investment decisions.

Recommendations emanating from the study include urging the National Pensions Regulatory Authority (NPRA) to revise investment guidelines based on the research insights. This adjustment aims to empower pension fund managers to leverage their risk management resources for investment decisions that yield higher returns than Government of Ghana-related securities. Moreover, the suggestion advocates pension fund managers to allocate a dedicated budget for their organizations' risk management functions. This financial allocation would enable them to enhance their IT infrastructure for risk management and provide regular training for staff in cutting-edge technology crucial for mitigating operational risks.

5.1. Practical Implications

Pension fund managers are to expedite risk reporting for timely market responsiveness. Furthermore, practically, it will empower the Bank of Ghana and the Ghana Stock Exchange to establish derivatives securities or exchange markets. This initiative would provide pension fund managers with a tool for risk mitigation and income generation through derivatives.

In addition, it is advised that the National Insurance Commission formulate policies requiring insurance companies to offer coverage for the pensions industry, safeguarding investments and retirement income. The study underscores how corporate governance fundamentals have substantial beneficial effects on company performance. Corporate governance approaches are cutting-edge in industrialized economies that have solid regulatory structures.

Nonetheless, in developing nations such as Ghana, inadequate regulatory frameworks may enable companies to evade regulations. It is crucial to establish a robust regulatory framework in developing nations like Ghana to ensure compliance and accountability among companies. Some specific suggestions for enhancing regulatory frameworks are:

The enhancement and fortification of regulatory frameworks in developing nations, such as Ghana, is paramount to ensuring adherence to established laws and regulations, safeguarding public interests, and fostering sustainable economic development. This comprehensive endeavour encompasses various initiatives, ranging from legislative reforms to stakeholder engagement and capacity-building measures.

Firstly, a critical step involves the thorough review and updating of existing laws and regulations to rectify any gaps and inconsistencies within regulatory frameworks. Simultaneously, there is a necessity to introduce new legislation where necessary, particularly to accommodate emerging industries and technol-

ogies. This proactive approach ensures that regulatory mechanisms remain relevant and effective amidst evolving socio-economic landscapes.

Additionally, the establishment of independent regulatory agencies equipped with the authority to enforce regulations impartially and transparently is indispensable. These regulatory bodies must be endowed with adequate funding and staffed with highly qualified personnel to effectively discharge their duties. Their independence is pivotal in upholding the integrity and credibility of regulatory processes, thereby instilling public trust and confidence.

Moreover, stakeholder engagement emerges as a pivotal aspect in the formulation and review of regulatory policies. By fostering dialogue and collaboration with diverse stakeholders, including government agencies, industry representatives, civil society organizations, and the public, regulatory frameworks can be tailored to reflect the diverse needs and concerns of all involved parties. This inclusive approach enhances the legitimacy and effectiveness of regulatory measures.

Investment in training programmes and capacity-building initiatives for regulatory agencies and personnel constitutes another essential facet of regulatory enhancement. By equipping regulatory authorities with the requisite skills and knowledge in monitoring, enforcement, and compliance, regulatory efficacy and enforcement capabilities are bolstered.

Furthermore, the adoption of risk-based approaches to regulation prioritises regulatory efforts based on the potential impact of non-compliance on critical factors such as public health, safety, and the environment. This strategic allocation of resources ensures that regulatory interventions are targeted and proportionate to identified risks.

Transparency and accountability are fundamental principles that underpin effective regulatory governance. To this end, promoting transparency in regulatory processes, including the publication of regulatory decisions, enforcement actions, and compliance data, fosters public scrutiny and accountability. Mechanisms for reporting regulatory violations and addressing stakeholder complaints further reinforce regulatory oversight and responsiveness.

Institutionalising systems for monitoring and evaluating the effectiveness of regulatory frameworks is imperative. Regular reviews and updates based on feedback and evaluation findings facilitate continuous improvement and adaptation to changing circumstances.

Alignment of regulatory frameworks with international standards and best practices enhances credibility and facilitates international trade and investment, thereby promoting economic growth and development.

Moreover, public awareness campaigns and educational initiatives play a pivotal role in informing businesses, consumers, and the public about regulatory requirements, rights, and responsibilities. Enhanced awareness fosters compliance and fosters a culture of regulatory compliance.

Furthermore, strengthening enforcement mechanisms through the provision of necessary tools and resources, including legal authority, inspection capabili-

ties, and sanctions for non-compliance, is essential to deter regulatory violations and ensure compliance.

In the context of corporate governance within pension funds, ensuring stakeholder interactions and business performance is crucial for sustainability and competitiveness. Diversified boards, incorporating experienced members, gender diversity, and representation of younger members, adapt to evolving customer preferences and facilitate effective decision-making through regular board meetings.

Despite the non-influence of CEO duality on pension fund performance in Ghana, the importance of corporate governance measures in preventing chaos, bankruptcy, and regulating organisational actions cannot be understated. Financial challenges faced by the financial services sector necessitate increased focus on improving corporate governance procedures within pension firms. Managers and regulators to efficiently manage pension funds and foster trust among retirees must implement stringent regulations.

The insights provided in this report serve as a valuable resource for pension fund managers and regulators to improve corporate governance practices through effective training programmes and policy changes. These recommendations hold relevance not only for Ghanaian industries but also for emerging economies with similar regulatory environments, offering opportunities for improvement and sustainable development.

In conclusion, by diligently implementing these comprehensive suggestions, Ghana and other developing nations can establish regulatory frameworks that promote compliance, protect public interests, and contribute to sustainable economic development.

5.2. Limitations of the Study

Future research endeavours must tackle constraints like the limited number of managers and the specific emphasis on corporate governance. A more thorough insight would be provided by a more extensive analysis that takes stakeholders and industry-wide challenges into account. The absence of a local national database makes it difficult to obtain information about informal and small-scale pension plans. Future studies could examine a variety of performance metrics outside of return on assets, evaluating corporate governance in pension funds using sustainable benchmarks that consider social and environmental factors.

5.3. Future Research Direction

The focus of this study sought to investigate the relationship between the financial performance of private pension schemes in Ghana and the risk management procedures used by pension fund administrators. To confirm the consistency of risk management strategies' effects on financial performance, it is advised that analogous research should be conducted on the underlying national social security programme as well as other industries which includes the banking and insurance sectors.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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